

WHAT IS CLAIMED IS:

1. An inside/outside air switching device for an air conditioning unit of a vehicle comprising:

a case defining an air passage through which air flows, the case forming a first port through which inside air inside a compartment is introduced and a second port through which outside air outside the compartment is introduced;

a rotary door rotatably supported in the case for selectively opening and closing the first port and the second port, wherein the rotary door includes a rotation shaft, a periphery wall moved about a rotation shaft, and side walls connecting between axial ends of the periphery wall and the rotation shaft, wherein in an air mixing mode the rotary door is disposed such that the periphery wall projects toward the second port by a predetermined distance so that the rotary door partially opens the first port and mainly opens the second port; and

a cover member disposed to cover a projected portion of the periphery wall.

2. The inside/outside air switching device according to claim 1, wherein the case is disposed such that the second port is located under an outside air intake port of a cowl of the vehicle, and the cover member is disposed adjacent to the cowl.

3. The inside/outside air switching device according to

claim 2, wherein the cover member and the cowl are formed into a single panel.

4. The inside/outside air switching device according to claim 1,

wherein the case includes a first sealing surface and a second sealing surface at a periphery of the second port, the first sealing surface is farther away than the second sealing surface with respect to the first port, and the door includes an elastic sealing portion that is brought into contact with the first sealing surface when the door fully opens the first port and the second sealing surface when the door opens the second port,

wherein the cover member is disposed such that it projects from the second sealing surface toward the second port.

5. The inside/outside air switching device according to claim 4, wherein the case is disposed such that the first port is located behind the second port with respect to a vehicle front and rear direction.

6. The inside/outside air switching device according to claim 2, wherein the case is sealed with the cowl around the second port by an elastic member.

7. An inside/outside air switching device for a vehicular

air conditioning unit comprising:

a case defining a first port through which inside air inside a compartment is introduced and a second port through which outside air outside the compartment is introduced, wherein the case has an intermediate wall between the first port and the second port, and the intermediate wall defines a sealing surface on a perimeter of the second port;

a rotary door rotatably supported in the case for selectively opening and closing the first port and the second port, wherein the rotary door includes a rotation shaft, a periphery wall rotating about the rotation shaft, side walls connecting between axial ends of the periphery wall, and first and second sealing portions formed at ends of the periphery wall, and the first sealing portion is brought into contact with the sealing surface of the case when the rotary door fully opens the second port; and

an elastic sealing member disposed to create seal between the intermediate wall and the periphery wall when the rotary door partially opens the first port and mainly opens the second port in an air mixing mode.

8. The inside/outside air switching device according to claim 7, wherein the elastic sealing member is provided at an end of the intermediate wall.

9. The inside/outside air switching device according to claim 7,

wherein the intermediate wall defines another sealing surface on a perimeter of the first port so that the second sealing portion of the rotary door is brought into contact with the another sealing surface when it fully opens the first port, and

wherein the elastic sealing member is disposed to cover the ends of the sealing surfaces.

10. The inside/outside air switching device according to claim 7, wherein the periphery wall of the rotary door is partly corrugated.

11. The inside/outside air switching device according to claim 7, wherein the elastic sealing member is disposed such that its end is bent along the periphery wall when creating seal between the intermediate wall and the periphery wall.

12. The inside/outside air switching device according to claim 7, wherein the case is disposed such that the second port is adjacent to an outside air intake port of a cowl of the vehicle, wherein the case is sealed with the cowl around the second port.